भारतीय मानक
Indian Standard

IS 16550 (Part 1) : 2016
(Reaffirmed 2021)

जैविक उत्पादन प्रणाली एवं जैविक रूप से उत्पादित उत्पादों की लेबलिंग

भाग 1 फसल आधारित

Organic Production System and Labelling of Organically Produced Products

Part 1 Crop Based

ICS 65.020.01

© BIS 2016

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुरशाह ज़फर मार्ग, नई दिल्ली-110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI-110002
www.bis.org.in www.standardsbis.in

January 2016 **Price Group 7**

Agricultural Systems and Management Sectional Committee, FAD 22

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards after the draft finalized by the Agricultural Systems and Management Sectional Committee had been approved by the Food and Agriculture Division Council.

Organic crop production system is a holistic production management system which promotes and enhances agro eco system health, including biodiversity, biological cycles and soil biological activity. It emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. This is accomplished by using, where possible, cultural, biological and mechanical methods, as opposed to using synthetic materials to fulfill any specific function within the system. An organic production system is designed to:

a) enhance biological diversity within the whole system;
b) maintain long-term soil fertility by increasing soil biological activity;
c) recycle wastes of plant and animal origin in order to return nutrients to the land, thus minimizing the use of non-renewable resources;
d) rely on renewable resources in locally organized agricultural systems;
e) promote the healthy use of soil, water and air as well as minimize all forms of pollution thereto that may result from agricultural practices;
f) handle agricultural products with emphasis on careful processing methods in order to maintain the organic integrity and the vital quality of the product at all stages;
g) become established on any existing farm through a period of conversion, the appropriate length of which is determined by site specific factors such as the history of the land, and type of crops to be produced.

India is bestowed with a lot of potential to produce all varieties of organic products due to its various varied agro climatic conditions. In several parts of the country, the inherited tradition of organic farming is an added advantage.

National Standard for Organic Production (NSOP) under the National Programme for Organic Production (NPOP) is being implemented by Ministry of Commerce and Industry, Government of India for the export market. Organic products are gaining importance in the domestic market and their demand is on continuous increase. To meet the domestic requirements, Ministry of Agriculture, Cooperation and Farmers Welfare (DAC&FW) has launched a Participatory Guarantee System (PGS).

In view of the above, this standard is being formulated to prescribe the uniform requirements for organically produced crop based and animal based products both for export and domestic markets. This standard is published in two parts under the general title organic production system & labelling of organically produced products.

Part 1 of this standard covers the requirements for crop based organic production system and labelling of organically produced products and Part 2 of this standard covers the requirements for animal based organic production system and labelling of organically produced products.

In the formulation of this standard, considerable assistance has been derived from NSOP of the Ministry of Commerce and Industry.

Indian Standard

ORGANIC PRODUCTION SYSTEM AND LABELLING OF ORGANICALLY PRODUCED PRODUCTS

PART 1 CROP BASED

1 SCOPE

1.1 This standard covers the requirements for organic production system and labelling of products that are crop based, through the process of crop production up to packaging and transport of the final product.

1.2 Organic crop production management shall cover all agricultural food, fiber crops, herbal, medicinal and aromatic plant crops grown in the country from production to processing as well as collection of non-timber forest produce from the wild forests.

2 DEFINITIONS

2.0 For the purpose of this standard following definitions shall apply:

2.1 Conventional Farming

Conventional farming shall mean the farming systems dependent on input of synthetic fertilizers and/or synthetic chemicals and pesticides and synthetic hormones or which are not in conformity with the basic standards of organic production.

2.2 Conversion

Conversion is the process of changing an agricultural farm from conventional to organic farm. This is also called transition.

2.3 Conversion Period

The transition from non-organic to organic farming within a given period of time, during which the provisions concerning organic production have been applied.

2.4 Farm Unit

A farm unit is the agricultural farm area managed organically, by a farmer or a group of farmers.

2.5 Grower Groups

Grower groups are organized group of farmers who intend to practice organic farming/engage in organic processes in accordance with the requirements of this standard.

2.6 Inspection

Inspection shall include the site visit to verify that the performance of an operation is in accordance with the production or processing standards.

2.7 Labelling

Labelling shall mean any written, printed or graphic matter which is present on the label, accompanies the product, or is displayed near the product, including that for the purpose of promoting its sale or disposal.

2.8 Producer

A producer shall mean an individual farmer or a group of farmers or a business enterprise practicing organic farming or organic processing.

2.9 Operator

A farmer, processor, trader, handler or exporter, who is under Organic Certification.

2.10 Organic

Organic refers to a particular farming system as described in this standard.

2.11 Organic Agriculture

Organic agriculture is a system of farm design and management to create an eco system, which can achieve sustainable productivity without the use of synthetic external inputs such as chemical fertilizers, pesticides and synthetic hormones.

2.12 Parallel Production

Parallel production, a subset of split production, shall mean any production where the same unit is growing, same crops handling or processing the same products both in a certified organic status and a non-certified organic status. Similarly a situation with “organic” and “in conversion” production of the same product is also parallel production.

2.13 Split Production

Split production shall mean any production where the same unit is growing multiple crops and their handling or processing, both in a certified organic status and a non-certified organic status.

2.14 Part Conversion

Part conversion is when part of a conventional farm or unit has already been converted to organic production and a part is still under conventional system.

2.15 Plant Protection Product

Plant protection product shall mean any substance intended for preventing, destroying, attracting, repelling, or controlling any pest or disease including unwanted species of plants or animals during the production, storage, transport, distribution and processing of food, agricultural commodities, or animal feeds.

2.16 Polyculture

Polyculture is the rearing of two or more species in the same production system, and it is desirable to have them from different tropic levels.

2.17 Chemical Fertilizers

An inorganic material of wholly or partially synthetic origin that is added to the soil to supply plant nutrient in soluble form to sustain plant growth.

2.18 Pesticides

Synthetic pesticide is a poisonous chemical or mixture of chemicals that is intended to prevent, repel or kill any pest.

2.19 Risk Assessment

Risk assessment is process to identify potential risk in production and handling systems of organic products in order to check the infringement in the entire process for maintaining organic integrity of the produce/product.

2.20 Certification

Certification shall refer to the procedure which demonstrates that the production system of the operator has been methodically assessed and conforms to the requirements as specified in this standard.

2.21 Certification Body

Body that is responsible for certification of the operators as per this standard.

3 REQUIREMENTS

3.1 Crop Production Plan

The producer shall develop an organic crop production plan, which shall include.

3.1.1 Description of the crops in the production cycle (main crop, intercrop and relay crop) as per the agro climatic seasons.

3.1.2 Description of practices and procedures to be performed and maintained.

3.1.3 List of inputs used in production along with their composition, frequency of usage, application rate and source of availability.

3.1.4 Source of organic seeds and planting material.

3.1.5 Descriptions of monitoring practices and procedures to be performed and maintained to verify that the plan is being implemented effectively. Description of practices and procedures to be performed and maintained.

3.1.6 Description of the management practices and physical barriers established to prevent mingling and contamination of organic production unit from conventional farms, split production and parallel production.

3.1.7 Description of the record keeping system implemented to comply with the requirements of this standard.

3.1.8 Procedures governing the production in different farming systems, their documentation, and for preventing ad-mixing of input and products.

3.2 Conversion Requirements

3.2.1 There shall be a clear plan of how to proceed with the conversion. This plan shall be updated if necessary and shall cover all the requirements to be met. If the whole farm is not converted, it shall be ensured that the organic and conventional parts of the farm are separate and capable of being inspected individually.

3.2.2 The requirements of this standard shall also be met during the conversion period. All the requirements shall be applicable from the commencement of the conversion period till its conclusion.

3.2.3 Simultaneous production of conventional, in conversion and/or organic crops or which cannot be clearly distinguished from each other, shall not be permitted.

3.2.4 A full conversion period shall not be required where *de facto* the requirements of this standard have been met for several years and where the same can be verified with documentary evidence. However, this conversion period shall not be less than twelve months.

3.3 Duration of Conversion Period

3.3.1 In case of annual and biennial crops, plant products produced can be claimed as organic when the requirements of this standard have been met during the conversion period of at least 2 years (organic management) before sowing (the start of the production cycle).

3.3.2 In case of perennial plants other than grassland (excluding pastures and meadows), the first harvest may be claimed as organic, after at least 36 months of organic management.

3.3.3 Pastures, meadows and their products may be claimed as organic after 12 months of organic management.

3.3.4 The conversion period shall be counted from the date of registration with the Certification Body.

3.4 Landscape

3.4.1 Organic farming shall contribute beneficially to the ecosystem.

3.4.2 Areas which are managed organically may facilitate biodiversity, *inter alia* in any one of the following or their combination:

a) In general all areas which are under rotation and are not heavily manured.
b) Extensive pastures, waste lands, meadows, extensive grassland, extensive orchards, hedges, hedgerows, groups of trees and/or bushes and forest lines.
c) Ecologically rich fallow land or arable land.
d) Ecologically diversified (extensive) field margins (farm boundary and bunds).
e) Agro forestry system, diversification, mixed farming, multi-cropping, inter-cropping and relay cropping.

3.5 Choice of Crops and Varieties

3.5.1 All seeds and planting material used, shall be certified organic. When certified organic seed and planting materials are not available, conventional seed and planting material (but not treated with chemicals) shall be used.

3.5.2 Species and varieties cultivated shall be adapted to the soil and climatic conditions and be resistant to pests and diseases. In the choice of varieties, genetic diversity shall be taken into consideration.

3.5.3 Use of genetically engineered seeds, transgenic plants or planting material is prohibited.

3.6 Diversity in Crop Production and Management Plan

3.6.1 The basis for crop production in organic farming shall take into consideration the structure and fertility of the soil and the surrounding ecosystem, with a view to minimizing nutrient losses.

3.6.2 Where appropriate, the organic farms shall maintain sufficient diversity in a manner that takes into account pressure from insects, weeds, diseases and other pests, while maintaining or increasing soil organic matter, soil fertility, microbial activity and general soil health. For non perennial crops, this is normal, but not exclusive, achieved by means of crop rotation preferably by leguminous crops.

3.6.3 Soil fertility shall be maintained through, the cultivation of legumes or deep rooted plants and the use of green manures, along with the establishment of a programme of crop rotation and manuring with organic inputs.

3.7 Nutrient Management

3.7.1 Sufficient quantities of biodegradable material of plant and/or animal origin produced on organic farms shall form the basis of the nutrient management programme to increase or at least maintain soil fertility and the biological activity within it.

3.7.2 Nutrient management should minimize nutrient losses. Accumulation of heavy metals and other pollutants shall be prevented.

3.7.3 Non-synthetic mineral fertilizers and brought-in bio fertilizers (biological origin) shall be regarded as supplementary and not as a replacement for nutrient recycling.

3.7.4 The total amount of biodegradable material of plant or animal origin brought into the farm unit shall be declared.

3.7.5 Non-synthetic fertilizers shall only be used in a supplementary role to carbon based materials. Only those organic or non-synthetic fertilizers that are brought in to the farm (including potting compost) shall be used when, the circumstances demand in accordance with Annex A.

3.7.6 Manures containing human excreta (faeces and urine) shall not be used.

3.7.7 Non-synthetic fertilizers shall be applied in their natural composition and shall not be rendered more soluble by chemical treatment.

3.7.8 *p*H of the soil shall be maintained at optimum level.

3.7.9 Use of chemical fertilizers including mineral nitrogenous fertilizers and genetically engineered organisms and their parts of residue as raw material is prohibited.

3.8 Pest, Disease and Weed Management

3.8.1 Organic farming production systems shall be carried out in a way which ensures that losses from pests, diseases and weeds are minimized. Emphasis is placed on the use of crops and varieties well-adapted to the environment, fertile soils of high biological activity, balanced nutrient management programme, adapted rotations, inter-cropping, green manures, etc. Growth and development shall take place in a natural manner.

3.8.2 Weeds, pests and diseases shall be controlled through a number of preventive cultural techniques which limit their development, for example suitable rotations, green manures, early and pre drilling seedbed preparations, mulching, mechanical control and the disturbance of pest development cycles. Measures to prevent transmission of pests, parasites and infectious agents, shall be in place.

3.8.3 Pest management shall be regulated by understanding and disrupting the ecological needs of the pests. The natural enemies of pests and diseases shall be protected and encouraged through proper habitat management of hedges, nesting sites etc. An ecological equilibrium shall be created to bring about a balance in the pest predator cycle.

3.8.4 Products for pest, disease and weed management, prepared at the farm from local plants, animals and micro-organisms shall be used.

3.8.5 Thermic weed control and physical methods for pest, disease and weed management are permitted.

3.8.6 Thermic sterilization of soils to combat pests and diseases shall be restricted to circumstances where a proper rotation or renewal of soil cannot take place.

3.8.7 All equipment from conventional farming systems shall be properly cleaned and shall be free from residues before being used on organically managed areas.

3.8.8 The use of synthetic pesticides, herbicides, fungicides, growth regulators, synthetic dyes and insecticides is not permitted. Permitted products for plant pest and disease control are listed in Annex B. Documentary evidence of the need to use the product shall be kept.

3.8.9 Off farm inputs shall always be evaluated as per the criteria given in Annex C before approval is given for use.

3.8.10 The use of genetically engineered organisms or products is prohibited.

3.9 Contamination Control

3.9.1 All relevant measures shall be taken to minimize contamination from outside and within the farm.

3.9.2 Buffer zones shall be maintained to prevent contamination from conventional farms.

3.9.3 Polyethylene and polypropylene or other polycarbonates coverings such as plastic mulches, fleeces, insect netting and silage rapping, only are allowed. These shall be removed from the soil after use and shall not be burnt.

3.9.4 The use of poly chloride based products is prohibited.

3.10 Soil and Water Conservation

3.10.1 Soil and water resources shall be handled in a sustainable manner. Relevant measures shall be taken to minimize erosion and other forms of degradation of soil, excessive and improper use of water and the pollution of ground and surface water.

3.10.2 Clearing of land through the means of burning organic matter, for example slash-and-burn, straw burning is prohibited. The clearing of primary forest is also prohibited.

3.11 Collection of Non-Cultivated Material of Plant Origin/Forest Produces

3.11.1 The collection of wild plants and parts thereof, growing naturally, in natural areas and forest shall be accepted as organic production methods provided that these areas have not received treatment with products other than those permitted for use in organic production.

3.11.2 In case cultivation is carried out in forest area, procedures similar to those followed in organic farm cultivation shall be followed.

3.11.3 Organic collection management shall ensure that in case of minor forest produce collection, the State Government Act shall be applicable and shall not exceed sustainable yield of the collected species or otherwise threaten the local ecosystem.

3.11.4 The act of collection should positively contribute to the maintenance of natural areas. When harvesting or gathering the products, attention shall be paid to maintenance and sustainability of the ecosystem. Organic operators should collect products only from within the boundaries of the clearly defined wild collection area.

3.11.5 Wild harvested products shall only be claimed to be organic if derived from a stable and sustainable growing environment. Harvesting or gathering the product shall not exceed the sustainable yield of the ecosystem, or threaten the existence of plant or animal species.

3.11.6 Products can only be claimed to be organic if derived from a designated area for collection, clearly depicted in the map of the authorized area of collection by the forest department or state department, which is subject to inspection.

3.11.7 The collection area shall be at an appropriate distance from conventional farming, pollution and contamination.

3.11.8 The collector managing the harvesting or gathering of the products shall be clearly identified and be familiar with the collecting area in question.

3.12 Processing and Handling

3.12.1 Any handling and processing of organic products should be carried out in a manner so as to maintain the organic integrity of the product. The operator shall develop an organic processing and handling plan. An organic processing and handling plan must include:

a) Description of practices and procedures to be performed.
b) List of each substance/input used during production, processing, storage and handling indicating its composition, source, locations where it will be used and documentation of commercial availability as applicable. The approved Food Additives Including Carriers for Use in Production of Processed Organic Food is given at Annex D. Processing Aids and Other Products for use in Processing of Ingredients additives used in processing of organic products is given at Annex E.
c) Description of the monitoring mechanism followed and maintained to verify that the plan is effectively implemented.
d) Description of the record keeping system implemented to comply with the requirements of this standard.
e) Description of the management practices and segregation measures established to prevent commingling of organic and non-organic products during parallel processing and handling.
f) Identification of pollution sources and methods adopted to avoid contamination.
g) Procedure followed for processing and handling of organic products separately in time or place from the handling and processing of non-organic products.
h) The means and measures followed for identification of all products through the whole process.
j) Method followed for decontamination, cleaning or disinfection of all facilities where organic products are kept, handled, processed or stored.

3.12.2 *Pest Control During Processing*

3.12.2.1 Pests should be avoided by good manufacturing practices. This includes general cleanliness and hygiene.

3.12.2.2 A plan for pest prevention and pest control should be developed.

3.12.2.3 For pest management and control the following measures shall be used in order of priority:

a) Preventive methods such as disruption, elimination of habitat and access to facilities.
b) Mechanical, physical and biological methods.
c) Other substances used in traps.

3.12.2.4 Irradiation is prohibited.

3.12.2.5 There shall be no direct or indirect contact between organic products and prohibited substances (for example pesticides). In case of doubt, it shall be ensured that no residues are present in the organic product.

3.12.3 *Ingredients*

3.12.3.1 Ingredients used in processing shall be organic except where an organic ingredient is not available in sufficient quality or quantity, non organic ingredients may be used to an extent of 5 percent only in case of technological necessity or for particular nutritional purpose. Such non organic raw material shall not be genetically engineered.

3.12.3.2 The same ingredient within one product shall not be derived both from an organic and non-organic origin.

3.12.3.3 Preparations of micro-organisms and enzymes commonly used in food processing may be used, with the exception of genetically engineered micro-organisms and their products.

3.12.3.4 Water and common salt may be used in organic products.

3.12.3.5 Minerals (including trace elements), vitamins and similar isolated ingredients shall not be used except where use is legally required or where severe dietary, or nutritional deficiency can be demonstrated.

3.12.3.6 Ethylene gas shall be permitted for ripening.

3.12.4 *Processing Methods*

3.12.4.1 Processing methods should be based on mechanical, physical and biological processes.

3.12.4.2 The vital quality of an organic ingredient shall be maintained throughout each step of its processing methods and shall be chosen to limit the number and quantity of additives and processing aids. The following kinds of processes are approved:

a) Mechanical and physical,
b) Biological,
c) Smoking,
d) Extraction,
e) Precipitation, and
f) Filtration.

3.12.4.3 Extraction shall be with water, ethanol, plant and animal oils, vinegar, carbon dioxide, nitrogen or carboxylic acids. These shall be of food grade quality, appropriate for the purpose.

3.12.4.4 Filters shall neither be made of asbestos nor be permeated with substances which may negatively affect the product.

3.12.4.5 Irradiation is prohibited.

3.13 Packaging

3.13.1 Biodegradable, recyclable, reusable systems and eco-friendly packaging materials shall be used wherever possible.

3.13.2 Material used for packaging shall not contaminate food. Certain additives for use in manufacturing of packaging films for packaging of organic food stuffs are allowed for restricted use as given in Annex F.

3.13.3 The product shall be packed in a manner to prevent substitution or manipulation of the content.

3.13.4 Only approved packaging material shall be used.

3.14 Labelling

3.14.1 *General Requirements*

3.14.1.1 Labelling shall convey clear and accurate information on the organic status of the product.

3.14.1.2 When all the requirements of this standard are complied with, products shall be sold as “organic products”. Organic products in conversion shall be sold as “produce of organic agriculture in conversion” or of a similar description, when the requirements of this standard have been met for at least 12 months.

3.14.1.3 The label for conversion products shall be clearly distinguishable from the label for organic products by mentioning the year of conversion.

3.14.1.4 The name and address of the person or company legally responsible for the production of the product shall be mentioned on the label.

3.14.1.5 Additional product information shall be made available on request.

3.14.1.6 Ingredients or products derived from wild production shall be declared as such.

3.14.2 *Processed Products*

3.14.2.1 Single ingredient products shall be labelled as “Organic” when all requirements of this standard have been met.

3.14.2.2 Multi ingredient products where not all ingredients, including additives, are of organic origin shall be labelled in the following way (raw material weight):

a) Where a minimum of 95 percent of the ingredients are of certified organic origin, products shall be labelled “organic”.
b) Where less than 95 percent but not less than 70 percent of the ingredients are of certified organic origin, products shall not be labelled “organic”. The word “organic” may be used on the principal display in statements like “made with organic ingredients” provided, there is a clear statement of the proportion of the organic ingredients.
c) Where less than 70 percent of the ingredients are of certified organic origin, the indication that an ingredient is organic may appear in the ingredients list. Such a product shall not be labelled “organic”.
d) Added water and common salt shall not be included in the percentage calculations of organic ingredients.
e) All raw materials of a multi-ingredient product shall be listed on the product label in order of their weight percentage. It shall be clearly indicated which raw materials are of organic certified origin and which are not. All additives shall be listed with their full name.
f) If herbs and/or spices constitute less than 2 percent of the total weight of the product, they shall be listed as “spices” or “herbs” without stating the percentage.
g) Organic products shall not be labelled as GE (genetic engineering) or GM (genetic modification) free, in order to avoid potentially misleading claims about the end product. Any reference to genetic engineering on product labels shall be limited to the production method.
h) The label of a certified organic product shall depict the name and logo of the Certification Body.
j) In addition, the organic logo shall also be depicted for product categories as stated at (a) and (b) above.

3.15 Storage and Transport

3.15.1 Organic products shall be stored at ambient temperature. The following special conditions of storage are permitted

a) Controlled atmosphere,
b) Cooling,
c) Freezing,
d) Drying, and
e) Humidity regulation.

3.15.2 Product integrity shall be maintained during storage and transportation of organic products. Organic Products shall be protected at all times from co-mingling with non-organic products and from contact with materials and substances not permitted for use in organic farming/processing and handling.

3.15.3 Where only part of the unit is certified and other products are non-organic, the organic products shall be stored and handled separately to maintain their identity.

3.15.4 Bulk stores for organic products shall be separate from conventional product stores and clearly labelled to that effect.

3.15.5 Storage areas and transport containers for organic products shall be cleaned using methods and materials permitted in organic production. Measures should be taken to prevent possible contamination from any pesticide or other treatment not listed in Annex B

3.16 Marking

3.16.1 In addition to the labelling requirements given in **3.14**, each package of the organic product shall also be marked with the following details:

a) Name of the product;
b) Net quantity;
c) Batch or Code No. (whereever applicable);
d) The words 'Best before ....' (month and year to be indicated); and
e) Any other requirements as specified under the *Legal Metrology (Packaged Commodities) Rules,* 2011 and *Food Safety and Standards (Food Product Standards and Food Additives) Regulation,* 2011 and the Rules framed there under.

ANNEX A

(*Clause* 3.7.5)

PRODUCTS FOR USE IN FERTILISING AND SOIL CONDITIONING

In organic agriculture the maintenance of soil fertility may be achieved through the recycling of organic material whose nutrients are made available to crops through the action of soil micro organisms.

Many of these inputs are restricted for use in organic production. In this Annex "restricted" means that the use of these inputs shall be subject to conditions. Factors such as contamination, risk of nutritional imbalances and depletion of natural resources shall be taken into consideration and as recommended by the relevant Government agencies of the region.

Inputs	*Condition for Use*
Matter Produced on an Organic Farm Unit	
Farmyard and poultry manure, slurry, cow urine	Permitted
Crop residues and green manure	Permitted
Straw and other mulches	Permitted
Matter Produced Outside the Organic Farm Unit	
Blood meal, meat meal, bone meal and feather meal without preservatives	Restricted
Compost made from any carbon based residues (animal excrement including poultry) (factory farming sources not permitted)	Restricted
Farmyard manure, slurry, cow urine (preferably after control fermentation and/or appropriate dilution) "factory" farming sources not permitted	Restricted
Fish and fish products without preservatives	Restricted

Inputs	*Condition for use*
Guano	Restricted
Human excrement	Not permitted
By-products from the food and textile industries of biodegradable material of microbial, plant or animal origin without any synthetic additives	Restricted
Sawdust, wood shavings, wood provided it comes from untreated wood	Permitted
Seaweed and seaweed products obtained by physical processes extraction with water or aqueous acid and/or alkaline solution	Restricted
Sewage sludge and urban composts from separated sources which are monitored for contamination	Restricted
Straw	Restricted
Vermicasts	Restricted
Animal charcoal	Restricted
Compost and spent mushroom and vermiculate substances	Restricted
Compost from organic household reference	Restricted
Compost from plant residues	Permitted
By products from oil palm, coconut and cocoa (including empty fruit bunch, cocoa peat and empty cocoa pods)	Restricted
By products of industries processing ingredients from organic agriculture	Restricted
Minerals	
Basic slag	Restricted
Calcareous and magnesium rock	Restricted
Calcified seaweed	Permitted
Calcium chloride	Permitted
Calcium carbonate of natural origin (chalk, limestone, gypsum and phosphate chalk)	Permitted
Mineral potassium with low chlorine content (for example sulphate of potash, kainite, sylvinite)	Restricted
Natural phosphates (for example Rock phosphates)	Restricted
Pulverised rock	Restricted
Sodium chloride	Permitted
Trace elements (Boron, Ferrous, Manganese, Molybdenum, Zinc)	Restricted
Wood ash from untreated wood	Restricted
Magnesium sulphate (Epson salt)	Permitted
Gypsum (Calcium sulphate)	Permitted
Silage and silage extract	Permitted excluding Ammonium silage
Aluminum calcium phosphate	Restricted
Sulphur	Restricted
Stone meal	Restricted
Clay (bentonite, perlite, zeolite)	Permitted
Vermiculite	Permitted
Peat	Permitted
Biodynamic preparations	Permitted
Plant preparations and botanical extracts	Permitted
Microbiological Preparations	
Bacterial preparations (biofertilizers)	Permitted

“Factory” farming refers to industrial management systems that are heavily reliant on veterinary and feed inputs not permitted in organic agriculture.

ANNEX B

(*Clauses* 3.8.8 *and* 3.15.5)

PRODUCTS FOR PLANT PEST AND DISEASE CONTROL

Certain products are allowed for use in organic agriculture for the control of pests and diseases in plant production. Such products should only be used when absolutely necessary and should be chosen taking the environmental impact into consideration.

Many of these products are restricted for use in organic production. In this Annex "restricted" means that the use of these inputs shall be subject to conditions. Factors such as contamination, risk of nutritional imbalances and depletion of natural resources shall be taken into consideration and as recommended by the relevant Govt agencies of the region".

Inputs	*Condition for use*
Substances from Plant and Animal Origin	
Azadiracta indica	Permitted
Neem oil	Restricted
Preparation of rotenone from *Derris elliptica Lonchocarpus, Thephrosia* spp	Restricted
Gelatin	Permitted
Propolis	Restricted
Plant based extracts – garlic, pongamia etc	Permitted
Preparation on basis of pyrethrins extracted from *Chrysanthemum cinerariaefolium*, containing possibly a synergist P*yrethrum cinerafolium*	Restricted
Preparation from *Quassia amara*	Restricted
Preparation from *Ryania species*	Restricted
Tobacco tea	Not permitted
Lecithin	Restricted
Casein	Permitted
Sea weeds, sea weed meal, sea weed extracts, sea salt and salty water	Permitted
Extract from mushroom (Shiitake fungus)	Permitted
Extract from Chlorella	Permitted
Natural acids (vinegar)	Restricted
Minerals	
Chloride of lime/soda	Restricted
Clay (for example bentonite, perlite, vermiculite, zeolite)	Permitted
Copper salts/inorganic salts (Bordeaux mixture, copper hydroxide, copper oxychloride) used as a fungicide depending upon the crop.	Restricted
Mineral powders (for example stone meal)	Not allowed
Diatomaceous earth	Restricted
Light mineral oils	Restricted
Permanganate of potash	Restricted
Lime sulphur (calcium polysulphide)	Restricted
Silicates, clay (Bentonite)	Restricted
Sodium bicarbonate	Permitted
Sulphur (as a fungicide, acaricide, repellant)	Restricted
Microorganism used for biological pest control	
Fungal preparations (such as *Trichoderma* spp, *Metarhizium, Bauveria, Verticillium, Noumeria*, etc)	Permitted
Bacterial preparations (such as *Bacillus* spp, *Pseudomonas fluorescens*)	Permitted

Inputs	*Condition for use*
Release of parasites, predators, natural enemies of pest and sterilized insects	Permitted
Others	
Carbon dioxide and nitrogen gas	Restricted
Soft soap (potassium soap)	Permitted
Ethyl alcohol	Not allowed
Homeopathic and Ayurvedic preparations	Permitted
Herbal and biodynamic preparations	Permitted
Traps	
Physical methods (Chromatic traps, Mechanical traps, sticky traps and Pheromones	Permitted

ANNEX C

(*Clause* 3.8.9)

PROCEDURE TO EVALUATE ADDITIONAL INPUTS TO ORGANIC AGRICULTURE

C-0 Annex A and Annex B refer to products for fertilising of the soil and control of plant pest and diseases in organic agriculture. But there may well be other products which may be useful and appropriate for use in organic agriculture which may not fall under these headings. Annex C outlines the procedure to evaluate other inputs into organic production.

C-1 The following checklist should be used for amending the permitted substance list for fertilising the soil conditioning purposes:

a) The material is essential for achieving or maintaining soil fertility or to fulfill specific nutrient requirements, for specific soil-conditioning and rotation purposes which cannot be satisfied by the practices outlined in **3** of this standard or of other products included in Annex A and the ingredients are of plant, animal, microbial or mineral origin which may undergo the following processes;
b) physical (mechanical, thermal);
c) enzymatic;
d) microbial (composting, digestion);
e) Their use does not result in, or contribute to, unacceptable effects on, or contamination of, the environment, including soil organisms; and
f) Their use has no unacceptable effect on the quality and safety of the final product.

C-2 The following checklist shall be used for amending the permitted substance list for the purpose of plant disease or pest and weed control:

a) The material is essential for the control of a harmful organism or a particular disease for which other biological, physical or plant breeding alternatives and/or effective management techniques are not available.
b) The substances (active compound) shall be plant, animal, microbial or mineral origin which may undergo the following processes:
   1) physical
   2) enzymatic
   3) microbial
c) Their use does not result in, or contribute to, unacceptable effects on, or contamination of, the environment.
d) Nature identical products such as pheromones, which are chemically synthesised may be considered if the products are not available in sufficient quantities in their natural farm, provided that the conditions for their use do not directly or indirectly contribute to contamination of the environment or the product.

C-3 EVALUATION

When an input is to be evaluated it must first be investigated to see whether it fulfills the following six criteria. An input shall fulfill all the following requirements before it can be accepted as suitable for use in organic agriculture.

Inputs should be evaluated regularly and weighed against alternatives. This process of regular evaluation should result in organic production becoming ever more friendly to humans, animals, environment and the ecosystem.

C-3.1 Necessity

The necessity of each input shall be established. This will be investigated in the context in which the product will be used.

Arguments to prove the necessity of an input may be drawn from such criteria as yield, product quality, environmental safety, ecological protection, landscape, human and animal welfare.

The use of an input may be restricted to:

a) Specific crops (especially perennial crops)
b) Specific regions
c) Specific conditions under which the input may be used

C-3.2 Nature and Way of Production Nature

The origin of the input should usually be (in order of preference):

a) Organic – vegetative, animal, microbial
b) Mineral

Non-natural products which are chemically synthesized and identical to natural products may be used.

When there is any choice, renewable inputs are preferred. The next best choice is inputs of mineral origin and the third choice is inputs which are chemically identical to natural products. There may be ecological, technical or economic arguments to take into consideration in the allowance of chemically identical inputs.

C-3.2.1 *Way of Production*

The ingredients of the inputs may undergo the following processes:

a) Mechanical
b) Physical
c) Enzymatic
d) Action of micro-organisms
e) Chemical (as an exception and restricted)

C-3.3 Collection

The collection of the raw materials comprising the input must not affect the stability of the natural habitat nor affect the maintenance of any species within the collection area.

C-3.4 Environment

C-3.4.1 *Environmental Safety*

The input must not be harmful or have a lasting negative impact on the environment. Nor should the input give rise to unacceptable pollution of surface or ground water, air or soil. All stages during processing, use and breakdown must be evaluated.

The following characteristics of the input must be taken into account:

- Degradability

All inputs must be degradable to their mineral form.

Inputs with a high acute toxicity to non-target organisms should have a maximum half-life of five days. Natural substances used as inputs which are not considered toxic do not need to be degradable within a limited time.

- Acute toxicity to non-target organisms

When inputs have a relatively high acute toxicity for non-target organisms, restrictions for their use is needed. Measures have to be taken to guarantee the survival of these non-target organisms. Maximum amounts allowed for application may be set. When it is not possible to take adequate measures, the input shall not be used.

- Long-term chronic toxicity

Inputs which accumulate in organisms or systems of organisms and inputs which have, or are suspected of having, mutagenic or carcinogenic properties shall not be used. If there are any risks, sufficient measures have to be taken to reduce any risk to an acceptable level and to prevent long lasting negative environmental effects.

- Chemically synthesized products and heavy metals

Inputs should not contain harmful amounts of man made chemicals (xenobiotic products). Chemically synthesized products may be used only if identical to the natural product.

Mineral inputs should contain as few heavy metals as possible. Due to the lack of any alternative, and long-standing, traditional use in organic agriculture, copper and copper salts are an exception for the time being. The use of copper in any form in organic agriculture must be seen, however, as temporary and use must be restricted with regard to environmental impact.

- Human Health

Inputs must not be harmful to human health. All stages during processing, use and degradation must be taken into account. Measures must be taken to reduce any risks and standards set for inputs used in organic production.

- Product Quality

Inputs must not have negative effects on the quality of the product – for example taste, keeping quality, visual quality.

C-3.5 Ethical Aspects — Animal Welfare

Inputs must not have a negative influence on the natural behaviour or physical functioning of animals kept at the farm.

C-3.6 Socio Economic Aspects

Consumers' perception: Inputs should not meet resistance or opposition of consumers of organic products. An input might be considered by consumers to be unsafe to the environment or human health, although this has not been scientifically proven. Inputs should not interfere with a general feeling or opinion about what is natural or organic; for example genetic engineering.

ANNEX D

(*Clause* 3.12.1)

FOOD ADDITIVES INCLUDING CARRIERS FOR USE IN PRODUCTION OF PROCESSED ORGANIC FOOD

International Numbering System	*Name of Additive/ Carrier*	*Use in Preparation of Food Products*	*Conditions for Use*
INS 170	Calcium carbonate	✓	Not for use for colouring/calcium enrichment of products
INS 220	Sulphur dioxide	✓	For fruit wines without added sugar
INS 270	Lactic acid		For concentrated fruit/veg. juice & fermented veg. products
INS 296	Malic acid	✓	
INS 290	Carbon dioxide	✓	
INS 300	Ascorbic acid	✓	
INS 306	Tocopheroles, mixed, natural concentrates	✓	Antioxidant for fats and oils
INS 322	Lecithin	✓	
INS 325	Sodium lactate		
INS 330	Citric acid	✓	For concentrated fruit/veg. Jam, fermented veg. product
INS 331	Sodium citrate	✓	
INS 333	Calcium citrate	✓	
INS 334	Tartaric acid	✓	
INS 335	Sodium tartarate	✓	
INS 336	Potassium tartarate	✓	
INS 341	Mono calcium phosphate	✓	For raising flour only
INS 400	Alginic acid	✓	
INS 401	Sodium alginate	✓	
INS 402	Potassium alginate	✓	

International Numbering System	*Name of Additive/ Carrier*	*Use in Preparation of Food Products*	*Conditions for Use*
INS 406	Agar	✓	
INS 407	Carrageenan	✓	
INS 410	Locust bean gum	✓	
INS 412	Guar gum	✓	
INS 414	Arabic gum	✓	
INS 415	Xanthum gum	✓	
INS 422	Glycerol	✓	For use in plant extracts
INS 440	Pectin	✓	
INS 464	Hydroxy propyl methyl cellulose	✓	For encapsulation material for capsules
INS 500	Sodium carbonate	✓	
INS 501	Potassium carbonate	✓	For drying of grape resins
INS 503	Ammonium carbonate	✓	
INS 504	Magnesium carbonate	✓	
INS 509	Calcium chloride	✓	
INS 516	Calcium sulphate	✓	Restricted; For use only as carrier
INS 524	Sodium hydroxide	✓	
INS 551	Silicon dioxide	✓	Anticaking agent for herbs & spices
INS 553	Talc	✓	
INS 938	Argon	✓	
INS 939	Helium	✓	
INS 941	Nitrogen	✓	
INS 948	Oxygen	✓	

ANNEX E

(*Clause* 3.12.1)

PROCESSING AIDS AND OTHER PRODUCTS FOR USE IN PROCESSING OF INGREDIENTS

Product	*Use in Preparation of Food Products*	*Conditions for Use*
Water	✓	Potable water
Calcium chloride	✓	Coagulation agent
Calcium carbonate	✓	Coagulation agent
Calcium hydroxide	✓	
Calcium sulphate	✓	Coagulation agent
Magnesium chloride	✓	Coagulation agent
Potassium carbonate	✓	Drying of grapes
Sodium carbonate	✓	Sugar production
Lactic acid		
Citric acid	✓	
Sodium hydroxide	✓	Sugar production, oil production from rape seed

Product	*Use in Preparation of Food Products*	*Conditions for Use*
Sulphuric acid	✓	Sugar production
Hydrochloric acid		
Ammonium hydroxide		
Hydrogen peroxide		
Carbon dioxide	✓	
Nitrogen	✓	
Ethanol	✓	Solvent
Tannic acid	✓	Filtration aid
Egg white albumin	✓	
Casein	✓	
Gelatin	✓	
Isinglass	✓	
Vegetable oils	✓	Greasing, releasing or antifoaming agent
Silicon dioxide gel	✓	
Activated carbon	✓	
Talc	✓	In compliance with the specific purity criteria for food additive
Kaoline	✓	
Cellulose	✓	
Diatomaceous earth	✓	
Perlite	✓	
Hazel nut shells	✓	
Rice meal	✓	
Bee wax	✓	Releasing agent

Flavouring Agents

a) Volatile (essential) oils produced by means of solvents such as oil, water, ethanol, carbon dioxide and mechanical and physical processes.
b) Natural smoke flavour.
c) Use of approved natural flavouring preparations.

Preparations of Micro-organisms

a) Preparations of micro-organisms accepted for use in food processing
b) Genetically modified microorganisms are excluded
c) Bakers yeast produced without bleaches and organic solvents

Ingredients

a) Drinking water
b) Salt
c) Minerals (including trace elements) and vitamins where their use is legally required or where severe dietary or nutritional deficiency can be demonstrated.

ANNEX F

(*Clause* 3.13.2)

APPROVED ADDITIVES FOR USE IN MANUFACTURING OF PACKAGING FILMS FOR PACKAGING OF ORGANIC FOODSTUFF

Certain additives for use in manufacturing of packaging films for packaging of organic food stuff are allowed for restricted use. In this annex “restricted” means that the use of these inputs shall be subject to conditions.

Sl No.	*Products*	*Limitation*
1.	4,4’-Bis(2-benzoxazolyl)stilbene	Restricted
2.	9,9-Bis(methoxymethyl)fluorine	Restricted
3.	Carbonic acid, copper salt	
4.	Diethyleneglycol	Restricted
5.	2-(4,6-Diphenyl-1,3,5-triazin-2-yl)-5-(hexyloxy) phenol	
6.	Ethylenediaminetetraacetic acid, copper salt	Restricted
7.	2-(2-Hydroxy-3,5-di-tert-butyl-phenyl)-5-chlorobenzotriazole	
8.	2-Methyl-4-isothiazolin-3-one	Restricted
9.	Phosphoric acid, trichlorocthylester	
10.	Polyesters of 1,2 propanediol and/or 1,3-and 1, 4 butanediol and/or polypropyleneglycol with adipic acid, also end-capped with acetic acid or fatty acids C10-C18 or *n*-octanol and/or *n*-decanol	Restricted
11.	1,1,1-Trimethylolpropane	Restricted
12.	3-hydroxybutanoic acid 3-hydroxypentanoic acid, Copolymer	Restricted

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc No.: FAD 22 (2700).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 2323 0131, 2323 3375, 2323 9402 *Website*: www.bis.org.in

Regional Offices:		*Telephones*
Central	: Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	2323 7617 2323 3841
Eastern	: 1/14 C.I.T. Scheme VII M, V. I. P. Road, Kankurgachi KOLKATA 700054	2337 8499, 2337 8561 2337 8626, 2337 9120
Northern	: SCO 335-336, Sector 34-A, CHANDIGARH 160022	260 3843 260 9285
Southern	: C.I.T. Campus, IV Cross Road, CHENNAI 600113	2254 1216, 2254 1442 2254 2519, 2254 2315
Western	: Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	2832 9295, 2832 7858 2832 7891, 2832 7892

Branches: AHMEDABAD. BENGALURU. BHOPAL. BHUBANESHWAR. COIMBATORE. DEHRADUN. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KOCHI. LUCKNOW. NAGPUR. PARWANOO. PATNA. PUNE. RAJKOT. VISAKHAPATNAM.

Published by BIS, New Delhi